

## WHAT IS CLAIMED IS:

1. A voltage-controlled oscillator, comprising an oscillating stage with two coupled CMOS inverters forming a quadrupole with two inputs and with two outputs, and two oscillating circuits  
5 placed respectively between the inputs and the outputs of the inverters and each oscillating circuit comprising an inductor, the quadrupole being configured such that the outputs of the quadrupole are in phase, wherein the inductors of the oscillating circuits are produced in MOS technology and are superposed one on top of the other.
- 10 2. The oscillator according to claim 1, wherein the inductors of the oscillating circuits are produced in the form of spirals implanted in respective metallization levels of an integrated circuit.
3. The oscillator according to claim 2, wherein the inductors are in the form of spiraled  
15 capacitors formed respectively by metal implantation in the metallization levels that are isolated by a thin oxide film.
4. The oscillator according to claim 1, wherein each inverter comprises two oppositely  
20 biased MOS transistors placed in line, the input of the inverters being located on the gate of one of the transistors having a first bias and the output at the mid-point of the two transistors.
5. The oscillator according to claim 4, wherein the input of each inverter is coupled to the  
gate of a transistor with a second bias of the other inverter, the said second bias being opposite  
that of the said first bias.
- 25 6. The oscillator according to claim 1, further comprising an amplification stage comprising two oppositely biased MOS transistors placed in series, the gate of each MOS transistor being coupled to one of the outputs of the oscillating stage.